

Studies in the genus *Acacia* (Mimosaceae)—6

—Miscellany—

By B. R. Maslin

Abstract

Four new, phyllodinous, endemic, Western Australian species of *Acacia* are described: *A. curvata* sp. nov., *A. roycei* sp. nov., *A. sciophanes* sp. nov. and *A. sibina* sp. nov.

A full description of *A. aciphylla* Benth. is provided. In Western Australia this name has been misapplied to the species here described as *A. sibina*.

The new name, *A. tetanophylla*, is given to the taxon *A. triptycha* var. *pungens* E. Pritzel.

All species are illustrated and their distribution mapped.

Introduction

The six species dealt with in this paper are referable to Bentham's Series *Calamiformes*, *Juliflorae* and *Pungentes*. These Series will not be revised by me for some time but as it is desirable to have the species names available, I have decided to describe them now, prior to the revision.

The term *obloid* was introduced in a previous paper (Maslin 1975, p. 392). The term was originally used to describe flower heads but subsequently it has been found useful in describing other three-dimensional structures found in *Acacia*, especially seeds. Therefore, the original definition of the term *obloid* is here expanded to encompass any three dimensional structure, oblong in plane view (normally with round ends), whose length to width ratio ranges from 6:5 to 2:1.

In most cases only a small selection of specimens is cited under each taxon. A complete list of specimens seen is given at the end of this paper.

1. *Acacia aciphylla* Benth., *Linnaea* 26:627 (1855). *Lectotype*: Swan River, *Drummond* IV:14 (K; iso: P, K, MEL, PERTH). *lecto. nov.*—Figure 1.

At the Western Australian Herbarium (PERTH) the name *A. aciphylla* Benth. has, in the past, been misapplied to specimens of the taxon described below (p. 155) as *A. sibina* Maslin sp. nov. Because of the confusion surrounding the name *A. aciphylla*, a description of this species is here provided.

Dense *shrub* to 1.3 m tall, dividing near ground level into many spreading to ascending branches; *bark* grey; *branches* terete, glabrous, normally red-brown towards apex; *new shoots* slightly resinous, light green. *Stipules* caducous. *Phyllodes* acicular, 60–120 (150–170) mm long, ca. 1 mm diam., decurrent (i.e. pulvinus absent, no articulation between phyllode base and branch), \pm rhombic in cross section (almost terete), ascending, rigid, glabrous (except on upper surface at extreme base where they are densely tomentose), light green to subglaucous; *apex* tapered into a straight, brown, pungent mucro; *nerves* numerous, close together, slightly raised, those on the four angles of the phyllodes slightly broader than the rest; *pulvinus* absent. *Gland* inconspicuous, situated ca. 1 mm above base of phyllode. *Inflorescences* simple, to 4 per node; *peduncles* 2–3 mm long, glabrous or puberulous; *receptacles* 3–5 mm long, glabrous or puberulous; *flower heads* obloid, 6–7 mm long just prior to anthesis. *Flowers* normally 5-merous; *calyx* 1/2–2/3 length of corolla, divided for 1/4–1/3 its length into \pm oblong lobes, tube sparsely to moderately puberulous

towards base, obscurely 5-nerved; *petals* 2 mm long, glabrous, obscurely 1-nerved. *Legumes* linear, to 60 mm long and 2 mm wide. \pm coriaceous, brittle, raised over seeds, glabrous, greyish brown; *margins* not thickened, slightly contracted between seeds, yellow. *Seeds* (few seen) longitudinal in legume, obloid to ellipsoid, a little compressed, ca. 2.5 mm long, 1.8 mm wide, mottled, \pm light brown; *pleurogram* obscure, horseshoe-shaped, open towards the hilum; *areole* less than 0.5 mm long; *funicle* gradually thickened into a convoluted, translucent, yellow *aril*.

Distribution: (Figure 7) Western Australia: Not a particularly common species. Most collections of *A. aciphylla* have been made in the Tardun area (about 35 km southeast of Mullewa) but there is one gathering from between Pithara and Bindi Bindi (about 200 km south of Tardun). It is likely that future sampling of suitable habitats will reveal *A. aciphylla* in the intervening region between these two widely separated areas.

Habitat: This species has been collected in both yellow sand and red-brown rocky loam in dense "Wodjil" scrub (*Acacia-Melaleuca-Casuarina* association). It has also been found on lateritic hills.

Flowering and fruiting period: All the flowering specimens of *A. aciphylla* at hand were collected in late August. Judging from these specimens the flowering period would probably extend from late July to mid-September. Legumes with some mature seeds have been collected in late October.

Selected specimens: WESTERN AUSTRALIA:—8.5 mi (13.5 km) west of Canna, *J. S. Beard* 7211 (PERTH); Between Bindi Bindi and Pithara, *W. E. Blackall* 3638 (PERTH); 50 km from Mullewa towards Morawa, *B. R. Maslin* 3358 (CANB, K, NSW, NY, PERTH).

According to Bentham's classification (1864) *A. aciphylla* belongs to the *Juliflorae-Stenophyllae*. The species can be easily recognised by its characteristic phyllodes which are rigid, glabrous, multistriate, more or less rhombic in cross section, pungent, decurrent and which lack pulvini. These last two characters are very unusual but occur also in *A. longiphyllodiinea* Maiden, the species most closely allied to *A. aciphylla*. The former species is readily distinguished from *A. aciphylla* by its pruinose branchlets, its longer, less rigid, coarsely pungent phyllodes (not as sharp as in *A. aciphylla*), and larger inflorescences and legumes.

Tindale (1972, p. 272) stated that *A. wanyu* Tindale is allied to *A. aciphylla* and *A. longiphyllodiinea*. Although all these species are referable to Bentham's *Juliflorae-Stenophyllae* there is only a superficial resemblance between *A. wanyu* and the latter two. *Acacia wanyu* differs markedly from *A. aciphylla* and *A. longiphyllodiinea* in its phyllode and legume morphology and may be distinguished from them by the following characters (parameters given in brackets refer to the latter two species): phyllodes hairy (glabrous), more slender, less pungent and most significantly possess a definite rugose basal pulvinus which is articulate on the branch (phyllodes decurrent and lack pulvini); inflorescence spikes less compact; calyx more deeply dissected; legumes 6–10 mm wide, moniliform, thickly coriaceous to woody, conspicuously wrinkled when dry (2–5 mm wide, flat but raised over seeds, \pm coriaceous to brittle but not woody, not wrinkled when dry); seeds 6–9 mm long and 3–4 mm wide (2.5–5 mm long, 1.8–3 mm wide).

Bentham (1855, p. 627) in his original description of *A. aciphylla* noted that perhaps *A. leptoneura* Benth. var. *pungens* Meisn. represented the same taxon as his new species. In 1864 (p. 399) Bentham treated the varietal epithet, *pungens*, as a synonym of *A. aciphylla* and listed the type of this variety (Preiss 976) among the specimens cited. However, Bentham noted that he had not seen the Preiss specimen. I have examined the types of both *A. aciphylla* and *A.*

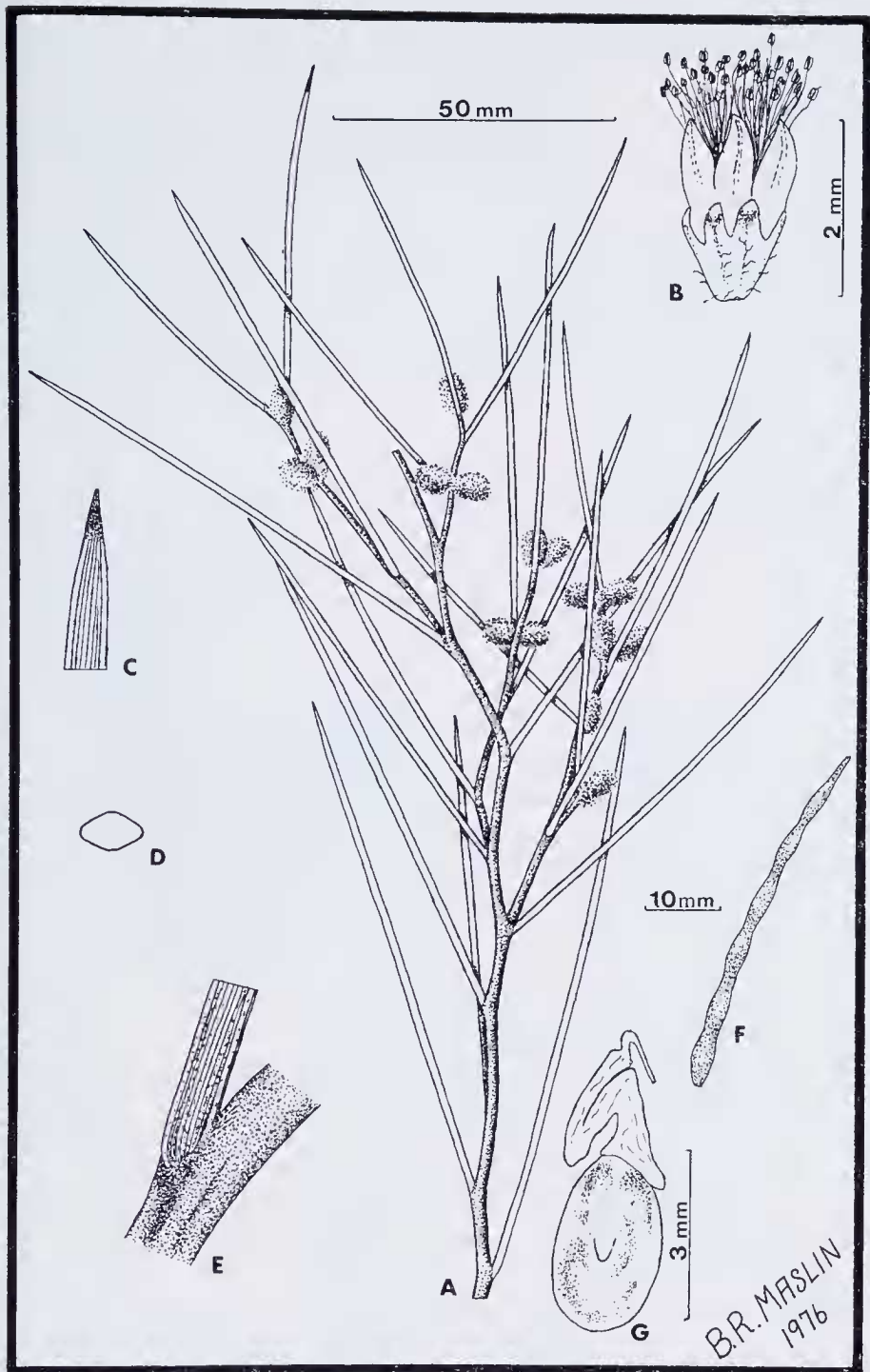


Figure 1—*Acacia aciphylla* Benth. A—Upper portion of branch showing \pm sessile, obloid flower heads. B—Flower. C—Phyllode apex. D—Phyllode in transverse section showing rhombic outline. E—Decurrent phyllode base (note absence of pulvinus). F—Legume (slightly immature). G—Seed (mottled).
A from *W. E. Blackall* 3638; B-E from *B. R. Maslin* 3358; F-G from *J. S. Beard* 7211.

leptoneura var. *pungens* and it is clear that they represent different taxa of which the latter will be dealt with in a forthcoming publication.

Pritzel (1904, p. 306) described a variety, *A. aciphylla* Benth. var. *leptostachys*, and based it on *Diels* 4759. A portion of this type is at PERTH and it is clear that it represents the same taxon described by Maiden et Blakely (1927, p. 23) as *A. sessilispica*. Although *A. sessilispica* also occurs in the *Juliflorae-Stenophyllae*, it is not particularly closely related to *A. aciphylla*.

Based on a specimen collected by F. E. Victor from Kununoppin, Morrison (1912, p. 55) provided a description of legumes for the plant he believed to be *A. aciphylla*. I have not seen Victor's specimen but it is unlikely to be *A. aciphylla* because the legumes of this species do not accord with Morrison's description, i.e. they are not stipitate, their apices not hooked, and the funicle-aril is yellow (not white as described by Morrison). Also, there is no indication from the evidence available to date that *A. aciphylla* extends as far east as Kununoppin.

2. *Acacia curvata* Maslin sp. nov.—Figure 2.

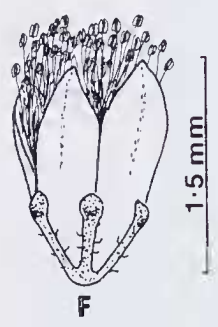
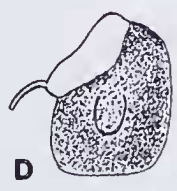
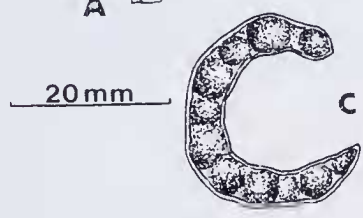
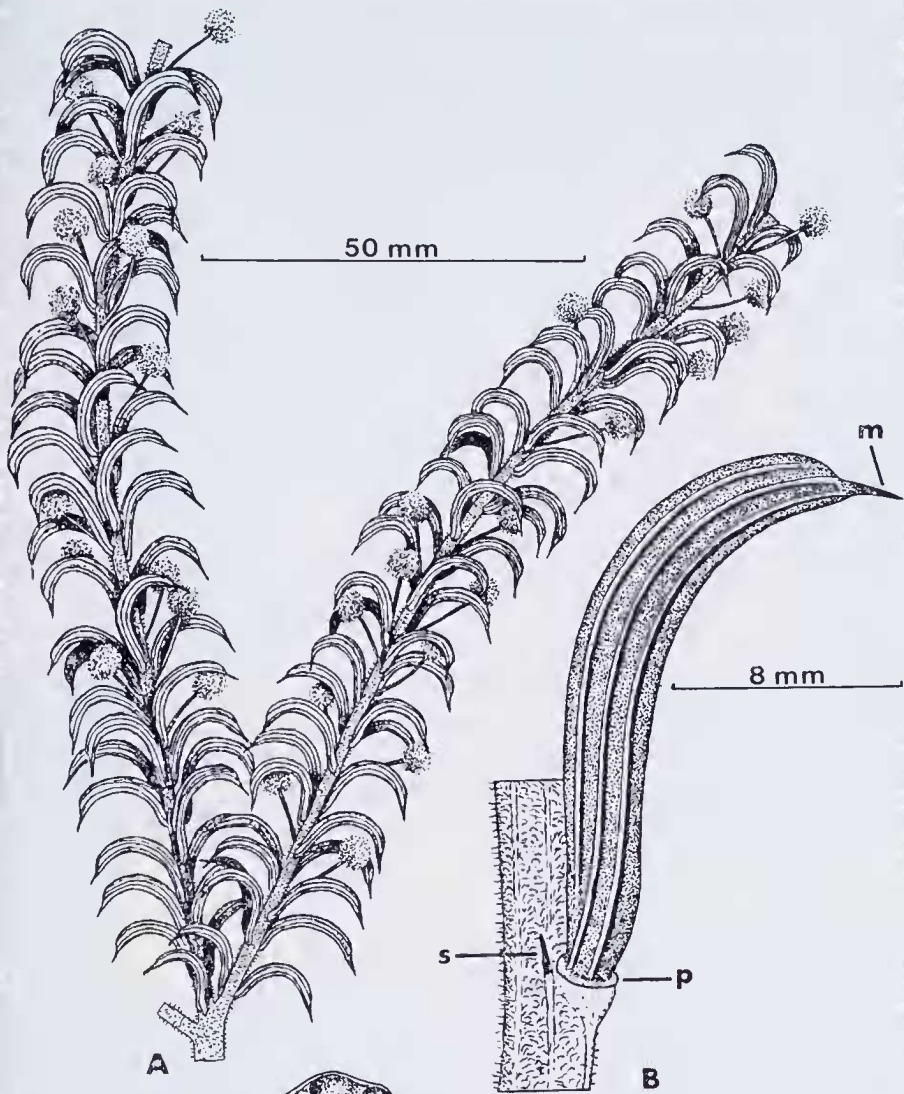
Frutex ramosissimus ad 1.3 m altus, ad ca. 3 m diam.; *ramuli* dense puberuli, demum glabra. *Stipulae* aliquantum caducae. *Phyllodia* acinaciforma, manifeste recurva, 10–20 mm longa, 1.5–3 mm lata, plana, glabra (surculi interdum puberuli), pungentia; utrinque 3-nervata, nervis discretis. *Glans* obscura, 0.5–7 mm supra pulvinum posita. *Inflorescentia* simplex; *pedunculis* 5–9 mm longis, glabris; *bracteae basales pedunculi* 1–1.5 mm longae, concavae, curvatae, acutae, ad basin dilatatae, fuscae; *capitula* aurea, globulosa, 13–25 floribus. *Florae* 5-merae; *sepala* libera; *petala* glabra. *Legumen* ad 35 mm longum, 4–4.5 mm latum, curvum, planum, glabrum. *Semina* (ferè matura) in legumine longitudinalia, late obloidea, = 2.5 mm longa, turgida fusca.

Type: 5.5 mi (8.8 km) SE of Kundip, Western Australia, 24 July 1965, K. Newbey 1765 (holo: PERTH: iso: CANB, K, NY).

Harsh, much branched *shrub* to 1.3 m tall and ca. 3 m diam., diffuse and open when young but becoming dense and rounded with age, single-stemmed or branching at ground level; *bark* grey and fissured; *branchlets* terete, obscurely nerved, densely puberulous (becoming glabrous with age). *Stipules* somewhat caducous, normally narrowly triangular, 0.5–1 mm long, scarious. *Phyllodes* acinaciform, prominently recurved, 10–20 mm long, 1.5–3 mm wide, = congested, flat, slightly thickened, rigid, glabrous (sometimes puberulous on new shoots), medium to olive green, base oblique; *nerves* 3 on each surface of phyllode, upper nerves sometimes not as pronounced as the central and lower ones, yellowish, prominently raised (when dry), not anastomosing, marginal nerves apparent but not thickened; *apex* narrowed into a subulate, pungent, straight, brown mucro 1–2 mm long; *pulvinus* very reduced (< 0.5 mm long), slightly dilated. *Gland* not prominent, situated on upper margin of phyllode 0.5–7 mm above pulvinus. *Inflorescences* simple, 1 (2) per node; *peduncles* 5–9 mm long (slightly longer when in fruit), glabrous; *basal peduncular bracts* solitary, 1–1.5 mm long, concave, curved, acute, dilated at base, normally puberulous, dark brown; *flower heads* golden yellow, globular, with 13–25 flowers. *Bracteoles* ± oblong, ca. 0.5 mm long, laminae barely differentiated from claws. *Flowers* 5-merous; *sepals* ca. 1/2 length of petals, free to base, narrowly oblong but often slightly narrowed towards base, ± keeled and inflexed at apex, normally sparsely puberulous, brown; *petals* 1–1.5 mm long, free, glabrous, yellow, obscurely 1-nerved; *ovary* tomentose. *Legumes* to 35 mm long, 4–4.5 mm wide, curved, firmly chartaceous and somewhat brittle, flat (not terete), slightly undulate, prominently raised over seeds (bulges prominent on alternate surfaces of legume), slightly shiny, glabrous, brown, abruptly

Figure 2—*Acacia curvata* sp. nov. A—Upper portion of the branch system. B—Node showing stipule (s) and recurved, 3-nerved phyllode with pungent mucro (m) and reduced pulvinus (p). C—Legume. D—Seed, nearly mature (side view). E—Seed, nearly mature (end view). F—Flower.

A-B from H. E. Knox 8; C-E from B. R. Maslin 2527; F from K. Newbey 1765 (the Type).



B.R. MASLIN
1976

contracted at apex, basal stipe absent; *margins* \pm thickened, barely contracted between seeds. *Seeds* (nearly mature) longitudinal in legume, broadly obloid, \pm 2.5 mm long, turgid, narrowed towards periphery, dark brown, slightly shiny; *pleurogram* horseshoe-shaped, open towards the hilum, obscure; *areole* ca. 0.5 mm long; *funicle* filiform, ca. 1 mm long, abruptly expanded into a thickened straight (not folded) obliquely situated *aril*.

Distribution: (Figure 7) Western Australia: Sporadic in southern regions from near Ravensthorpe east to Wittenoom Hills (about 50 km NE of Esperance).

Habitat: Clay, clay-loam or lateritic gravel.

Flowering period: Most collections in flower were gathered from May to July, but one flowering specimen seen was collected in December.

Fruiting period: Legumes with near-mature seeds have been collected in December.

Selected specimens: WESTERN AUSTRALIA:—Wittenoom Hills, 9 June 1972, *T. Daniels* s.n. (PERTH); South of Ravensthorpe, *A.S. George* 4422 (MEL, NSW, PERTH); Near Scaddan, *H. E. Knox* 8 (PERTH); Approximately 20 km due SW of Scaddan, *B. R. Maslin* 2527 (PERTH).

Using Bentham's classification (1864) *A. curvata* should be placed in the *Pungentes-Plurinerves*, but it is not particularly closely related to the other members of this group. In its general phyllode morphology *A. curvata* superficially resembles *A. campylophylla* Benth. but is readily distinguished from that species by its puberulous branchlets, reduced pulvinus which is articulate on the branch (in *A. campylophylla* the pulvinus is lacking and the lower margin of the phyllode is continuous with the branch rib), smaller bracteoles and flower heads, and curved, less chartaceous legumes. *Acacia curvata* has some affinities with *A. latipes* Benth. but its prominently recurved phyllodes with reduced pulvini readily distinguish it from that species (*Acacia latipes* has straighter phyllodes which lack pulvini).

The specific epithet refers to the characteristic recurved phyllodes.

3. *Acacia roycei* Maslin sp. nov.—Figure 3.

Frutex vel *arbor parva* ad 3.5 m altus, densiuscula, odorata; *ramuli* teretes, saepe ad apicem minute sericei sed deinde glabri. *Phyllodia* acicularia, 40–75 mm longa, 1 mm diam. teretia, ascenduntia, rigida, recta ad leviter curvata, subtiliter striata, inter venium minute sericeum sed deinde glabrum, pungentia. *Glands* saepe obscura, 5–17 mm supra pulvinum, raro etiam glande altera 50 mm supra pulvinum posita. *Inflorescentia* simplex; *pedunculi* 8–12 mm longi; *capitula* lutea, globulosa, 55–75 floribus. *Florae* 5-merae (raro 6-merae); *sepala* fere ad basin irregulariter lobata; *petala* glabra. *Legumen* curvum, plerumque ad ca. 50 mm longum, 4–5 mm latum, chartaceum, glabrum. *Semina* (immatura) in legumine longitudinalia.

Type: About 6 km W of Overlander-Denham road towards Tamala, Shark Bay area, Western Australia, 6 Aug. 1974, *B. R. Maslin* 3680 (holo: PERTH; iso: B, CANB, K, MEL, NSW, NY, PERTH).

Rather dense, fragrant *shrub* or *small tree* to 3.3 m tall, either single-stemmed or dividing at ground level into many spreading-erect branches; *new shoots* densely appressed-puberulous (hairs pale yellow); *bark* grey, fissured on main trunks, smooth on branches; *branchlets* terete, very obscurely nerved, red-brown but with a light grey longitudinally fissured epidermis, often minutely sericeous at apex but becoming glabrous with age. *Stipules* triangular to very narrowly triangular, more or less caducous (the thickened bases remaining after the scariosus laminae have fallen). *Phyllodes* acicular, 40–75 mm long, 1 mm diameter, terete (circular in cross section), slightly narrowed near base, ascending, rigid, straight to slightly curved, minutely sericeous between nerves but becoming glabrous with age, green to greyish green, finely multistriate

(lamina sometimes slightly depressed between nerves—when dry); *apex* narrowed into a straight, subulate, pungent, brown mucro ca. 2 mm long; *pulvinus* 0.5–1 mm long, slightly dilated, smooth, yellow. *Gland* often obscure, situated on upper surface of phyllode 5–17 mm above pulvinus, rarely an additional gland above middle of phyllode (ca. 50 mm above pulvinus). *In-florescences* simple, 1–2 per node; *peduncles* 8–12 mm long, sparsely to moderately minutely antrorsely hairy; *basal peduncular bracts* rather caducous; *flower heads* bright medium yellow, globular, with 55–75 rather densely packed flowers. *Bracteoles* ca. 1 mm long, sparsely puberulous; *claws* narrowly oblong or narrowed towards base; *laminae* \pm ovate, keeled, light brown. *Flowers* 5-merous (rarely a few flowers in the head 6-merous); *sepals* ca. 1/2 length of petals, irregularly divided almost to base into narrowly oblong or slightly spatulate sparsely puberulous lobes; *petals* 1.5–2 mm long, connate for 3/4 their length, glabrous, obscurely 1-nerved; *ovary* glabrous or sparsely papillose. *Legumes* narrowly oblong, curved, normally to ca. 50 mm long, 4–5 mm wide, chartaceous, flat but raised over seeds, glabrous, light brown to yellowish brown, \pm abruptly narrowed at both ends; *margins* barely thickened, normally slightly contracted between seeds. *Seeds* (immature) longitudinal in legume; *funicle* oblong and very short, abruptly expanded into a large bright yellow *aril* which is obliquely positioned on seed.

Distribution: (Figure 7) Western Australia: Occurring in an area from the vicinity of Nerren Nerren Station (90 km N of Murchison River on North West Coastal Highway) NNW to near Nilemah Station in the Shark Bay district.

Habitat: Beard (1976) states that the topography in which this species* occurs is very uniform and consists of red sandplain with slight undulations. The vegetation is an *Acacia-Casuarina* thicket with occasional emergent low trees and a ground layer of smaller shrubs. I have made a number of collections of *A. roycei* and found it growing in red-brown to light brown loam or yellow sand in Closed-scrub with *A. longispinea* A. Morrison, *A. wiseana* C. A. Gardner (occasionally *A. ramulosa* W. V. Fitzg.), *Banksia ashbyi* Bak. f. and *Eucalyptus roycei* Carr, Carr et George.

Flowering Period: August–October.

Fruiting period: Legumes with mature seeds have not been seen. Judging from the one specimen available with immature fruits, ripe seed would be found in about mid-November.

Selected specimens: WESTERN AUSTRALIA:—East of Nerren Nerren, *J. S. Beard* 7115 (PERTH); Hamelin Pool, *W. E. Blackall* 546 (PERTH); 36 km S of Overlander Roadhouse on North West Coastal Highway, *B. R. Maslin* 2780 (CANB, K, PERTH); 22.5 km S of Billabong Roadhouse towards Geraldton, North West Coastal Highway, *B. R. Maslin* 3719 (BRI, PERTH).

Using Bentham's classification (1864) *A. roycei* should be placed in the *Pungentes-Phurinerves*, but it is not closely related to the other members of this group. *Acacia roycei* is readily recognised by a combination of characters, viz. rigid, acicular, long-mucronate phyllodes, and globular, pedunculate flower heads each bearing over 50 flowers.

At the Western Australian Herbarium *A. roycei* has in the past been referred either to an undescribed variety of *A. leptoneura* Benth. or to *A. triptycha* var. *tenuis* Maiden (= *A. fragilis* Maiden et Blakely). However, it is not closely related to either of these taxa.

The species is named in honour of Mr Robert Dunlop Royce, Curator of the Western Australian Herbarium from 1960 until his retirement in 1974.

* *Acacia roycei* is referred to in Beard's work as "*A. sp. inedit.* (JSB 7115)".

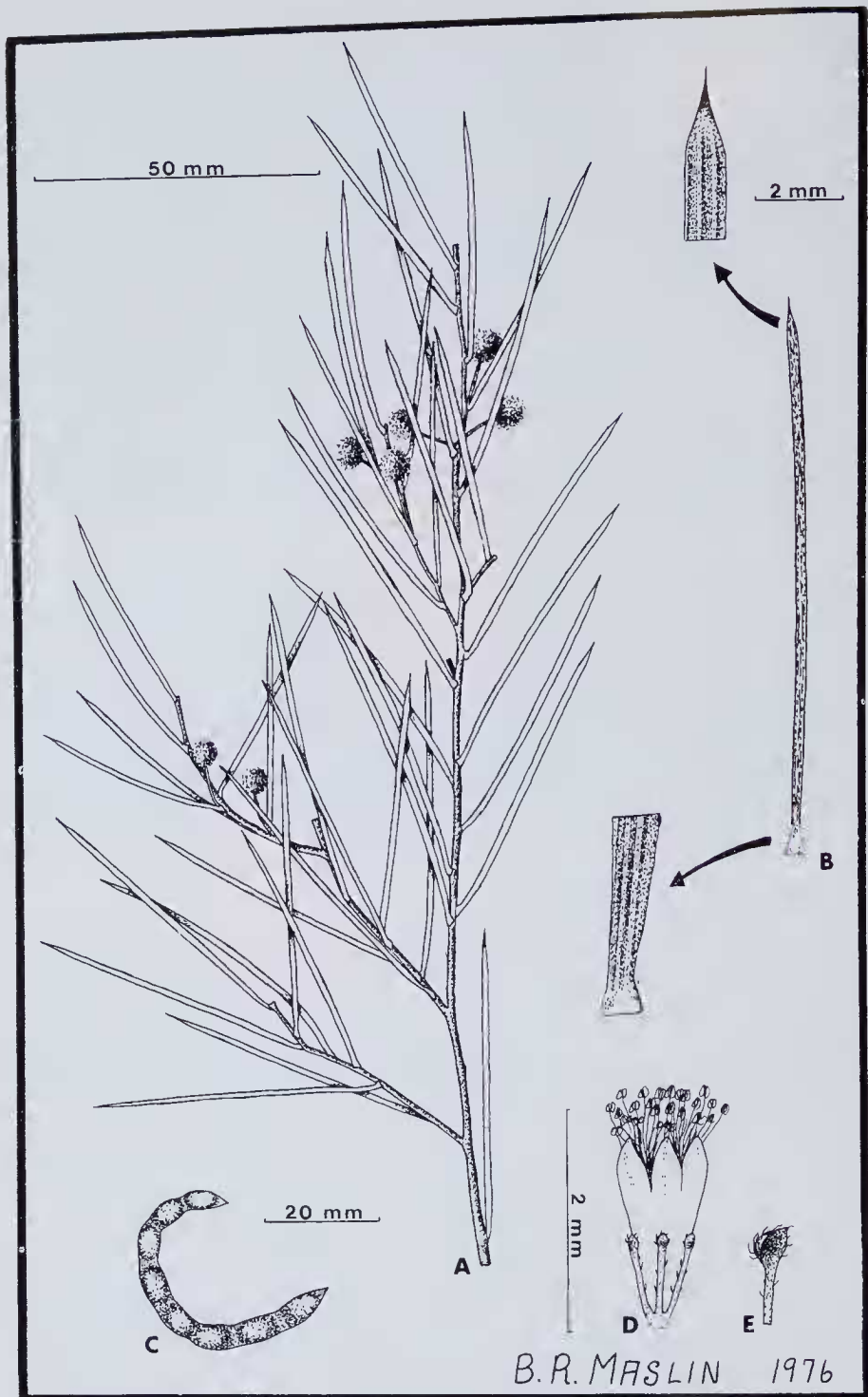


Figure 3—*Acacia roycei* sp. nov. A—Upper portion of branch. B—Phyllode (with insets of base and apex). C—Legume valve. D—Flower. E—Bracteole. All from B. R. Maslin 3680 (the Type).

4. *Acacia sciophanes* Maslin sp. nov.—Figure 4.

Frutex ad 2·3 m alta, diffusa, exilis; *rami* plerumque penduli flexuosi, glabri ad strigillisi. *Stipulae* caducae. *Pyllochia* linearia, 90–150 mm longa, 102 mm lata, + curvata, in sectione transversali + circularia ad quadrangularia, manifeste 4-costata (*costis* sulcisque alternantibus). *Glans* 1–2 mm supra pulvinum posita. *Inflorescentia* simplex; *pedunculi* 5–6 mm longi; *capitula* lutea, globulosa, 25–31 floribus. *Florae* 5-merae; *calyx* breviter triangulari-lobatus; *petala* glabra. *Legumen* lineare, ad 100 mm longum, 102 mm latum, + teres. *Semina* in legumine longitudinalia, obliodea ad ellipsoidea, 3·3–5 x 1·5 mm, maculata.

Type: 15 km west of Mukinbudin towards Welbungin, Western Australia, 13 Oct. 1975, B. R. Maslin 3970 (holo: PERTH; iso: AD, B, BM, BRI, CANB, G, K, MEL, NSW, NY, P, PERTH, US).

Diffuse, openly branched, wispy *shrub* to 2·3 m tall, dividing near ground level (or to 0·6 m above) into a number of main trunks; *bark* light grey, smooth but finely fissured at extreme base of trunk; *branches* mostly pendulous, flexuose, terete (but ribbed towards apex), slightly resinous, glabrous to strigillose, light brown towards apex but red-brown with a light grey peeling epidermis with age. *Stipules* caducous. *Phyllodes* coarsely filiform, 90–150 mm long, 1–2 mm wide, + curved, spreading, very slightly resinuous, slightly laterally compressed, prominently 4-ribbed (ribs alternating with 4 equally prominent grooves), ribs yellowish and glabrous, grooves concave subglaucous and glabrous or strigillose; *apex* straight or uncinata, not pungent, brown; *pulvinus* 1–2 mm long, obscurely wrinkled, glabrescent. *Gland* situated on upper rib of phyllode 1–2 mm above pulvinus, lamina tissue slightly swollen around gland, orifice distinct (oblong, ± 0·5 mm long), lip indistinct. *Inflorescences* simple, normally arising from near base of new shoot, 1–2 per axil; *peduncles* 5–6 mm long, slightly longitudinally sulcate (when dry), glabrous, or strigose at base, resinous; *basal peduncular bracts* caducous, solitary, ± triangular, + 1 mm long; *receptacles* slightly obloid, glabrous; *flower heads* bright yellow, globular, with 25–31 ± loosely arranged flowers. *Bracteoles* ca. 0·5 mm long (= calyx in length); *claws* linear; *laminae* ovate, puberulous, slightly keeled. *Flowers* 5-merous, slightly resinous; calyx 1/4 length of corolla, very shallowly divided (for ca. 1/6 its length) into broadly triangular ciliolate lobes, tube sparsely puberulous and nerveless; *petals* 2–2·5 mm long, connate for + 2/3 their length, not reflexed at anthesis, glabrous, very obscurely 1-nerved; *ovary* very shortly stipitate, densely tomentose. *Legumes* linear, to 100 mm long, 1–2 mm wide, ± terete, sometimes twisted, firmly chartaceous, silvery-strigillose; *margins* slightly contracted between seeds (indentations shallowly concave); *marginal nerves* scarcely thickened, broad, glabrous, yellowish. *Seeds* longitudinal in legume, obloid to ellipsoid, 3·3–5 x 1·5 mm, slightly compressed, mottled, a dark brown line extending around periphery, slightly shiny; *pleurogram* 'u'- to 'v'-shaped, open towards the hilum, obscure; *areole* 0·3–0·4 mm long; *funicle* convoluted, expanded into a pileiform white *aril*.

Distribution: (Figure 7) Western Australia: Known only from between Mukinbudin and Bencubbin.

Habitat: Yellow sand in tall dense sandplain scrub with *Acacia longispinea* A. Morrison, *A. resinomarginea* W. V. Fitzg., *A. signata* F. Muell. and *Casuarina acutivalvis* F. Muell.

Flowering period: The specimens at hand are all in flower and were collected from late September to mid-October. Judging from these it is likely that the flowering period would extend from mid-September to November.

Fruiting period: As with *A. anfractuosa* Maslin (see discussion below) the previous year's legumes are present on *A. sciophanes* during the next flowering season. Only one collection of specimens with legumes has been made and this was gathered in mid-October. These legumes contained some mature seeds.

Selected specimens: WESTERN AUSTRALIA:—Near Mukinbudin, 80 km N of Merredin, W. E. Blackall 848 (PERTH); West of Welbungin, C. A. Gardner 2754 (PERTH).

Using Bentham's classification (1864) *A. sciophanes* should be placed in the *Calamiformes-Uninerves*, but it is not related to the other members of this

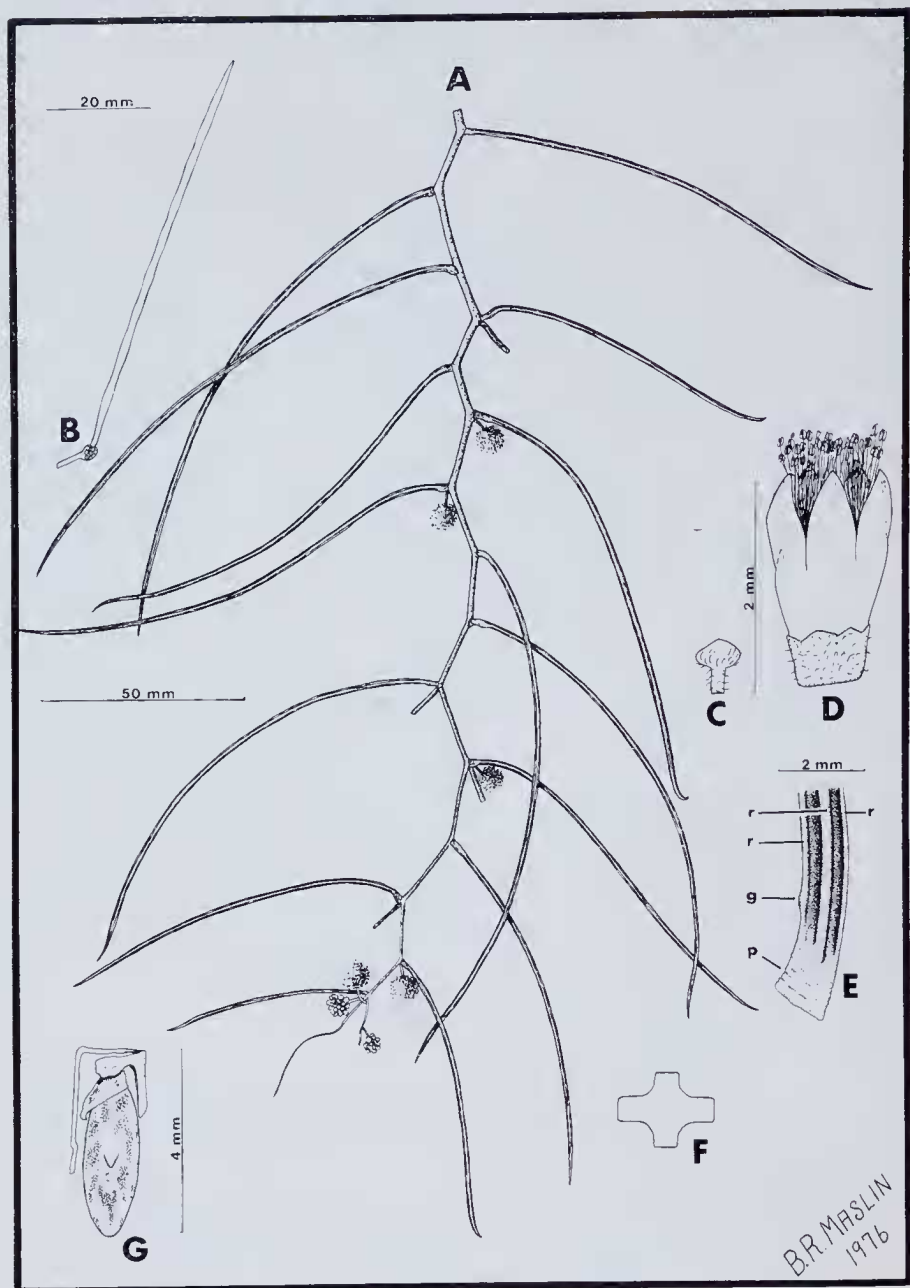


Figure 4—*Acacia sciophanes* sp. nov. A—Upper portion of branch showing pendulous habit. B—Legume (attached to receptacle). C—Bracteole. D—Flower. E—Phyllode base showing prominent ribs (r), obscurely wrinkled pulvinus (p) and gland (g). F—Phyllode in traverse section showing quadrangular outline. G—Seed (mottled). A, B, E-G from B. R. Maslin 3970 (the Type); C-D from C. A. Gardner 2754.

group. *Acacia sciophanes* has its true affinities with *A. anfractuosa* Maslin, another species which is difficult to fit into Bentham's classification (Maslin 1976, p. 97). These two taxa share the same distinctive wispy growth habit and have pendulous, flexuose branches, they also have similar inflorescence and legume characters. The main difference between them lies in the nature of their phyllodes. In *A. sciophanes* the phyllodes are more or less circular to quadrangular in cross-section and have four, equally spaced longitudinal ribs (alternating with four equally prominent grooves) running the entire length of the phyllodes. *Acacia anfractuosa* on the other hand has phyllodes which are either \pm flat or rhomboidal in cross-section and which have 3-7 nerves on each face. The known distributions of the two species do not overlap.

The variant of *A. anfractuosa* from between Mukinbudin and Welbungin referred to previously by me is *A. sciophanes* (Maslin, 1976 p. 98).

The specific epithet refers to the growth habit which is very diffuse and open imparting a phantom-like appearance to this species when seen from a distance.

5. *Acacia sibina* Maslin sp. nov.—Figure 5.

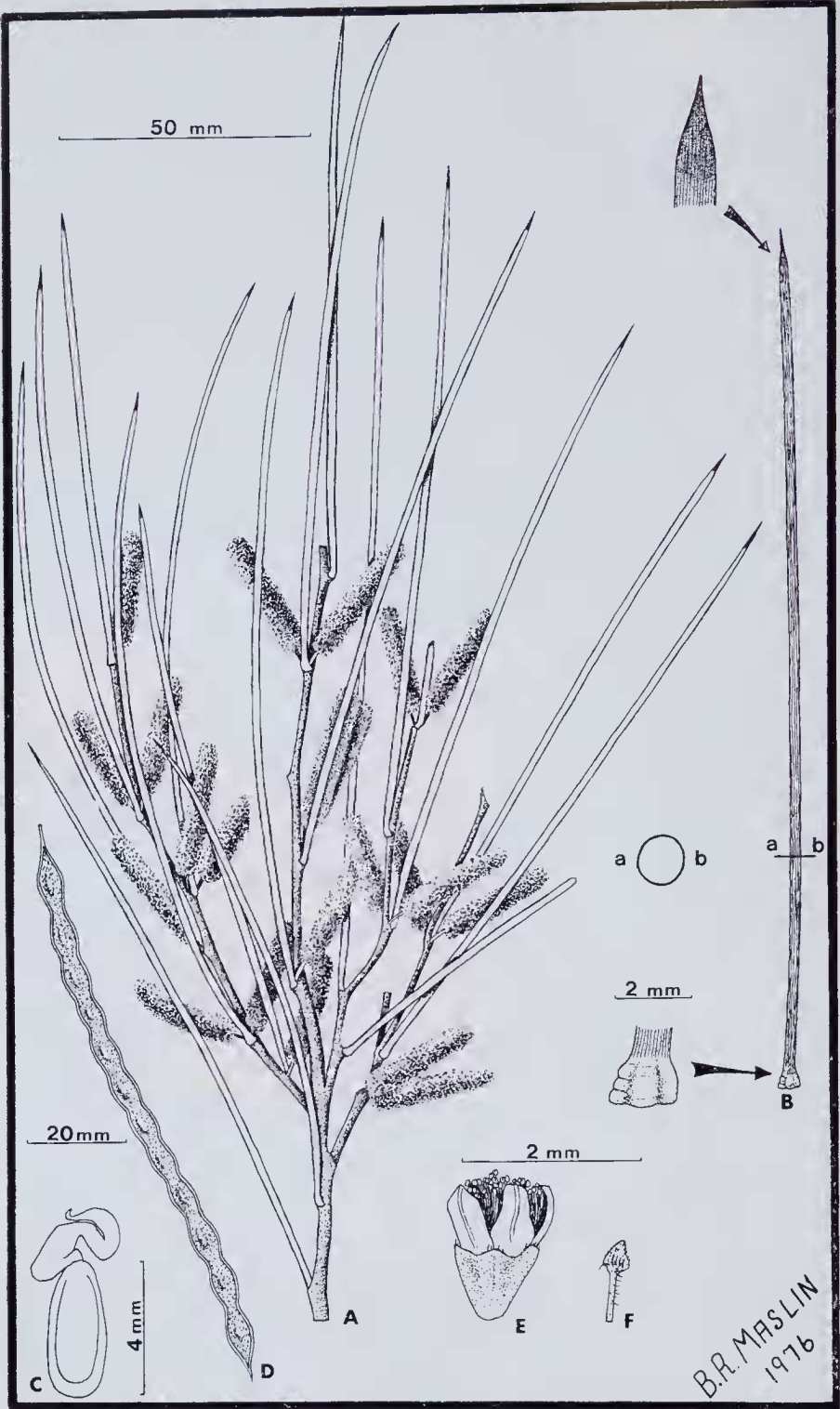
Frutex 1.5-3 m altus; *ramuli* stricti, ascendentes, glabri sed supra pulvinum dense tomentosi. *Stipulae* caducae. *Phyllodia* aciculara, (60) 80-125 (145) mm longa, 1 mm diam., teretia, ascendencia, aliquantum rigida, glabra (sed prope basin puberula), subtiliter striata, aliquantum pungentia. *Glands* obscura, 1-2 mm supra pulvinum posita. *Inflorescentia* simplex, plerumque 2/nodum; *pedunculi* 1.5-4 mm longi, puberuli; *capitula* cylindrica, ante anthesin 7-20 (26) mm longa. *Florae* 5-merae; *calyx* breviter triangulari-lobatus; *petala* glabra, 1-nervata. *Legumina* (immatura) linearia, ad 115 mm longa et 5 mm lata. *Semina* (immatura) in legumine longitudinalia.

[*Acacia cyperophylla* auct. non F. Muell.: Maiden, Forest Flora N.S.W. 6:277 (1917).]

[*Acacia aciphylla* in sched.—PERTH].

Type: Mount Gibson Station, between Wubin and Paynes Find, Western Australia, 29 Aug. 1976, B. R. Maslin 4230 (holo: PERTH; iso: CANB, K, MEL, NY).

Shrub 1.5-3 m tall, normally moderately branched at ground level; *bark* dark grey, fissured on main trunks towards their bases, otherwise smooth; *branches* straight, ascending, terete, very obscurely ribbed, glabrous but densely tomentose immediately above pulvinus, reddish brown with a light grey (often fissured) epidermis, lenticels quite apparent; *branchlets* light brown. *Stipules* caducous. *Phyllodes* acicular, (60) 80-125 (145) mm long, 1 mm diam., terete (circular in cross section), ascending, rather rigid, straight to slightly curved, glabrous (except on upper surface near pulvini where they are densely tomentose), grey-green (when dry), light green to slightly greyish green (when fresh), finely multistriate (striae not, or barely visible to unaided eye); *apex* straight or slightly uncinat, brown, somewhat pungent; *pulvinus* slightly dilated, orange, normally glabrous and obscurely wrinkled abaxially, concave and densely puberulous adaxially. *Gland* inconspicuous, situated on upper surface of phyllode 1-2 mm above pulvinus, a shallow densely tomentose groove extending from the gland to the pulvinus. *Inflorescences* simple, normally 2 per node; *peduncles* 1.5-4 mm long, moderately to densely puberulous (hairs normally antrorse); *basal peduncular bracts* absent at anthesis; *receptacles* glabrous; *flower heads* medium yellow, cylindrical, 7-20 (26) mm long just prior to anthesis. *Bracteoles* 0.8-1.3 mm long; *claws* linear, puberulous towards apex; *laminae* ovate, slightly keeled, slightly inflexed, ciliolate. *Flowers* 5-merous; *calyx* slightly exceeding 1/2 length of corolla, divided for 1/6-1/4 its length into broadly triangular sparsely ciliolate lobes, tube obscurely 5-nerved and either glabrous or sparsely puberulous; *petals* ca. 1.5-2 mm long, connate for ca. 1/2 their length, glabrous, 1-nerved; *ovary* glabrous to densely papillose. *Legumes* (immature) linear, to 115 mm long and 5 mm wide, firmly chartaceous, flat, glabrous, greyish brown; *margins* barely thickened, variably contracted between seeds. *Seeds* (immature) longitudinal in legume; *funicle* filiform, expanded into a thickened convoluted aril.



Distribution: (Figure 7) Western Australia: It appears that *A. sibina* has a disjunct distribution. However, future sampling of the region between the western and eastern parts of its range may reveal *A. sibina* there. The western part of its range extends from Mullewa to Lake Moore and it is from this area that most collections have been made. The eastern part of the range extends from Comet Vale northeast to near Warburton. It is possible that *A. sibina* will eventually be recorded for Northern Territory and/or South Australia.

Habitat: *Acacia sibina* grows under a variety of conditions. In the western part of its range it occurs in sandy gravel, light brown to red loam, or yellow sand in dense "Wodjil" scrub (*Acacia-Melaleuca-Casuarina* association). West of Warburton *A. sibina* grows in red sand in hummock grassland with *Triodia* while northeast of Laverton it is common in patches on red sand with occasional Mulga (*Acacia aneura* F. Muell. ex Benth.).

Flowering and fruiting period: Flowers from August to October. Young legumes are generally found in late October or early November, though young legumes were present on one specimen collected from the Great Victoria Desert in June. Legumes with mature seeds have not been seen by me.

Selected specimens: WESTERN AUSTRALIA:—Mullewa-Pindar road, G. Phillips for A. M. Ashby 4487 (MEL, PERTH); 8 mi (12.8 km) W of Pindar, J. S. Beard 6689 (NSW, PERTH); Karara Station, J. S. Beard 7197 (PERTH); 42 mi (67 km) SW of Warburton Mission, A. S. George 3977; Comet Vale, J. H. Maiden s.n., Sept. 1909 (NSW, PERTH—photograph); 16 km S of Morawa towards Perenjori, B. R. Maslin 3173 (BM, PERTH); Wilroy townsite, G. Phillips 93 (NT, PERTH).

Using Bentham's classification (1864) *A. sibina* should be placed in the *Juliflorae-Stenophyllae*. In Western Australia it has previously been confused with *A. aciphylla* Benth. (p. . . . above). *Acacia sibina* is distinguished from *A. aciphylla* by its non-decurrent, perfectly terete phyllodes, its longer, cylindrical flower heads (obloid in *A. aciphylla*), and its longer, broader legumes. In its general phyllode and inflorescence morphology, *A. sibina* resembles *A. cyperophylla* F. Muell. ex Benth., but can be distinguished by its glabrous phyllodes, shorter peduncles, narrower and less woody legumes and smooth (except on main trunk where it is fissured) grey bark (not red and curling as on *A. cyperophylla*).

Maiden (1917, p. 277) provisionally referred a flowering specimen collected by himself from Comet Vale (99 km N of Kalgoorlie) to *A. cyperophylla* F. Muell. I have inspected Maiden's specimen, which is at NSW, and found it to be *A. sibina*.

The specific epithet alludes to the phyllodes whose shape resembles an unbarbed spear.

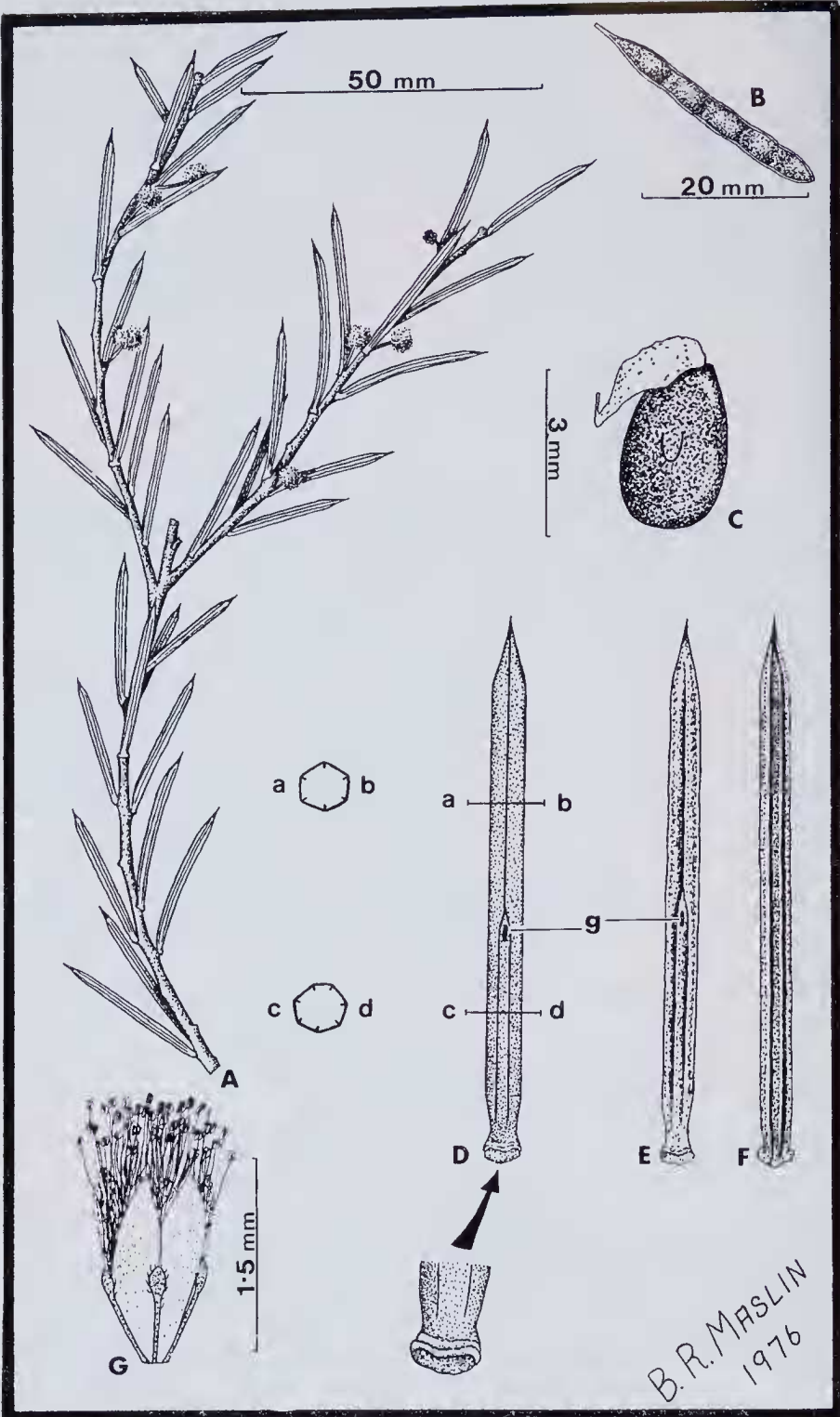
6. *Acacia tetanophylla* Maslin nom. et stat. nov., based on *A. triptycha* F. Muell. ex Benth. var. *pungens* E. Pritzel—Figure 6.

Acacia triptycha F. Muell. ex Benth. var. *pungens* E. Pritzel, Bot. Jb. 35:293 (1904). *Lectotype:* Kalgan River, 4 Oct. 1901, L. Diels 4596 (PERTH), *lecto nov.*

Shrub 1–1.3 m tall; *branches* glabrous or sometimes densely strigose. *Stipules* caducous. *Phyllodes* linear, 15–40 mm long, 1–1.5 mm wide, rigid, terete (appearing somewhat hexagonal in cross section when fresh, but upon drying the tissue between the nerves contracts giving the phyllode a sulcate appearance), straight or slightly curved, glabrous, light olive green or sometimes

Figure 5—*Acacia sibina* sp. nov. A—Upper portion of branch system. B—Phyllode (with insets showing apex, obscurely wrinkled pulvinus and transverse section showing circular outline). C—Seed (immature). D—Legume (with immature seeds). E—Flower. F—Bracteole.

A from G. Phillips 93; B, E-F from B. R. Maslin 3173; C-D from J. S. Beard 7179.



glaucous, 7-nerved (but on upper surface of phyllode 2 of these nerves unite immediately above the gland); *apex* pungent: *pulvinus* to 0.5 mm long, not prominently wrinkled, dilated at base. *Gland* not prominent, situated on upper surface of phyllode 5–15 mm above pulvinus. *Inflorescences* simple; *peduncles* 4–6 mm long (to 10 mm when in fruit), glabrous; *basal peduncular bracts* absent at anthesis; *flower heads* globular, with 13–18 flowers. *Flowers* 5-merous; *sepals* free, spatulate, brown (when dry), ciliolate at apex, claws glabrous to puberulous; *petals* very obscurely 1-nerved, yellow, glabrous. *Legumes* narrowly oblong, to 37 mm long and 4 mm wide, slightly undulate, raised over seeds, glabrous, brown; *margins* barely thickened, normally not contracted between seeds, yellow. *Seeds* longitudinal in legume, ellipsoid to obloid but truncated along margin adjacent to aril, slightly compressed, 2.5–3 mm long, 1.5–1.8 mm wide, black, slightly shiny; *pleurogram* not obvious; *funicle* filiform, reflexed below a thickened *aril* which is situated obliquely on seed.

Distribution: (Figure 7) South-west Western Australia: Occurring sporadically from just south of the Stirling Range east-northeast to the Ravensthorpe district.

Habitat: Occurs in sand or clay (often rocky) normally near watercourses.

Flowering and fruiting period: Flowers from September to October. Mature legumes have been collected in mid-December, but judging from some collections the fruiting period could extend to about mid-January.

Selected specimens: WESTERN AUSTRALIA:—Fitzgerald River reserve, B. R. Maslin 890 (CANB, PERTH); Near West River crossing, 37 km W of Ravensthorpe towards Jerramungup, B. R. Maslin 2579 (B, PERTH, S); Near West River crossing, K. Newbey 936D (K, PERTH).

Pritzel (1904, p. 293) described this taxon as *A. triptycha* F. Muell. ex Benth. var. *pungens*. As it is not closely allied to *A. triptycha* and because it is very distinctive morphologically, I have decided to give it specific rank. *Acacia tetanophylla* is distinguished from *A. triptycha* by its shorter, rigid, pungent, 6–7-nerved (not 8-nerved) phyllodes.

Using Bentham's classification (1864) *A. tetanophylla* should be placed in the *Pungentes-Plurinerves* near *A. sulcata* R.Br. The latter species is variable but can be distinguished from *A. tetanophylla* by its generally smaller, more slender, less pungent phyllodes and its conspicuous basal peduncular bracts.

The specific epithet refers to the characteristic rigid phyllodes. As *A. tetanophylla* is based on *A. triptycha* var. *pungens* it would be desirable to use this varietal epithet for the species, however, this name is preoccupied viz. *A. pungens* Spreng.

Acknowledgment

Mr Alex George is gratefully acknowledged for his assistance in checking my Latin descriptions.

Figure 6 *Acacia tetanophylla* sp. nov. A—Upper portion of branch system. B—Legume. C—Seed. D to F—Phyllodes (D and E—upper surface of phyllode showing nerve dividing immediately above gland (g), D—fresh state with transverse sections showing nerve positions, E—dry; F—lower surface of phyllode, dry). G—Flower.

A, D–G from B. R. Maslin 890; B from B. R. Maslin 2579; C from K. Newbey 936D.

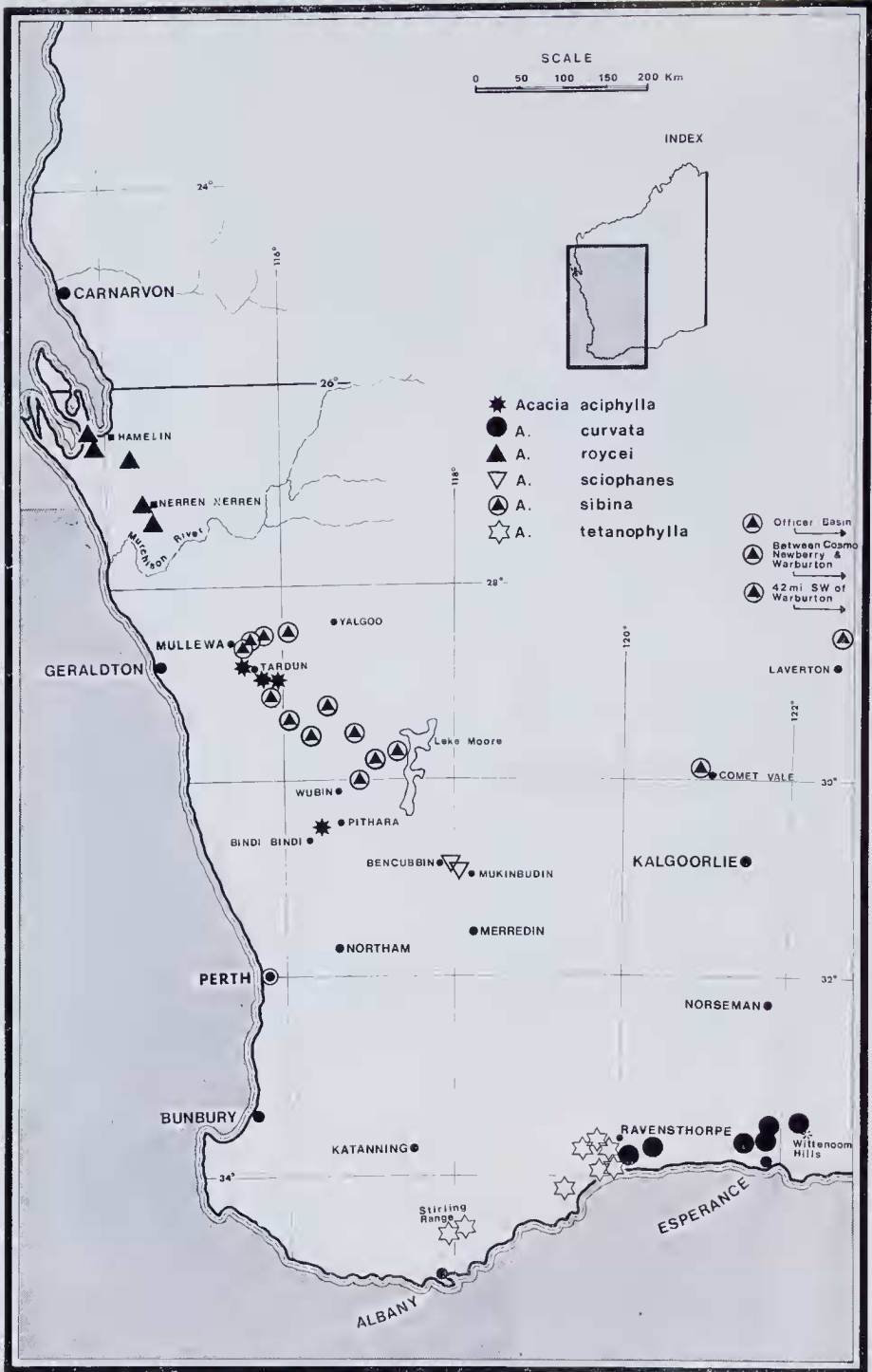


Figure 7—Distribution of *Acacia aciphylla*, *A. curvata*, *A. roycei*, *A. sciophanes*, *A. sibina* and *A. tetanophylla*.

References

- BIARD, J. S. (1976)—Vegetation Survey of Western Australia 1:250 000 Series. The vegetation of the Ajana area. Vegmap Publications, Perth.
- BENTHAM, G. (1855)—Mimosaceae. *Plantae Muellerianae*. *Linnaea* **26**: 603–630.
- BENTHAM, G. (1864)—*Flora Australiensis*, vol. 2. Reeve, London.
- BENTHAM, G. (1875)—Revision of the Suborder Mimosae. *Trans. Linn. Soc. Lond.* **30**:336–664.
- MAIDEN, J. H. (1917)—*Acacia cyperophylla*. The Forest Flora of New South Wales **6**:272–277. Govt. Printer, Sydney.
- MAIDEN, J. H. and BLAKELY, W. F. (1927)—Description of Fifty New Species and Six varieties of Western and Northern Australian Acacias, and Notes on Four other Species. *J. Roy. Soc. W.A.* **13**:1–36, pl. I–XXII.
- MASLIN, B. R. (1975)—Studies in the genus *Acacia* (Mimosaceae)—4. A revision of the Series Pulchellae. *Nuytsia* **1**(5): 388–494.
- MASLIN, B. R. (1976)—Studies in the genus *Acacia* (Mimosaceae)—5. Miscellaneous new phyllodinous species. *Nuytsia* **2** (2):96–102.
- MORRISON, A. (1912)—New or imperfectly described species of *Acacia* from Western Australia. *Trans. Bot. Soc. Edinburgh* **26** (1):51–56.
- PRITZEL, E. (1904)—*Acacia*. In L. Diels and E. Pritzel, *Fragmenta Phytographiae Australiae Occidentalis*. *Bot. Jb.* **35**:276–314.
- TINDALE, M. D. (1972)—Notes on Australian Taxa of *Acacia* No. 3. *Contr. N.S.W. Herb.* **4** (5):269–275.

Index to specimens studied

This index is arranged alphabetically according to the name of the collector. Numbers in parentheses refer to the corresponding taxon in the text.

- Armitage 542 (2).
- Ashby 2584 (5), 4487 (5), 4578 (1—comm. G. Phillips), 4864 (5, comm. G. Phillips).
- Barker s.n., Sept. 1934 (5).
- Beard 6427 (5), 6689 (5), 7115 (3), 7197 (5), 7208 (5), 7211 (1), 7357 (5).
- Bennett 2596 (2).
- Blackall 546 (3), 721 (5), 848 (4), 3638 (1).
- Brooker 2750 (6).
- Cole 4/43 (5).
- Cough 79 (5).
- Daniels s.n., 9 June 1972 (2).
- Diels 4596 (6-Type).
- Donner 4507 (5).
- Drummond IV:14 (1-Type).
- Fairall 1369 (5).
- Gardner 2754 (4).
- George 3977 (5), 4422 (2), 8092 (5).
- Goodall 2105 (5).
- Gratte G4 (5).
- Knox 8 (2).
- Luff and Birrel 51 (5).
- Lullfitz 1158 (5), 1188 (5).
- Maiden s.n., Sept. 1909, Comet Vale (5).
- Maslin 890 (6), 2527 (2), 2579 (6), 2780 (3), 3161 (3), 3173 (5), 3358 (1), 3456 (2), 3465 (6), 3466 (6), 3535 (5), 3680 (3-Type), 3719 (3), 3970 (4-Type), 4217 (5), 4230 (5-Type).
- Morland M2 (5).
- Newbey 936 (6), 936D (6), 1765 (2-Type), 2645 (6).
- Phillips 93 (5).
- Wilson 10198 (6).